AMENDMENTS TO THE CLAIMS

1-42 (Canceled)

43. (Previously presented) A computer implemented method comprising:

identifying portions of a model as being critical to a real-time execution of the model;

identifying other portions of the model as being non-critical to the real-time execution of the model;

generating code for real-time execution based on the critical portions of the model; and

transmitting the generated code for execution on a target.

44. (Previously presented) The method of claim 43 wherein non-critical portions are post-processing units.

45. (Previously presented) The method of claim 44 wherein the post-processing units are logical units of the model that have no synchronized data outputs feeding non-post-processing sections of the model.

46. (Previously presented) The method of claim 43 wherein the generating further comprises:

establishing an inter-process communication link between the generated code and the non-critical portions of the model.

47. (Previously presented) The method of claim 46 further comprising:

receiving output from the generated code via the inter-process communications link.

48. (Previously presented) The method of claim 47 further comprising executing the code on a target processor associated with the target.

49. (Previously presented) The method of claim 47 further comprising:

processing the output in the non-critical portions of the model.

50. (Previously presented) A computer-readable storage medium holding computer-executable instructions, the instructions comprising instructions for:

identifying portions of a model as being critical to a real-time execution of the model;

identifying other portions of the model as being non-critical to the real-time execution of the model;

generating code that is capable of real-time execution based on the critical portions of the model; and

transmitting the generated code for execution on a target.

51. (Previously presented) A processor and memory configured to:

identify portions of a model as being critical to a real-time execution of the model, and other portions of the model as being non-critical to a real-time execution of the model; and

generate code that is capable of real-time execution based on the critical portions of the model; and

transmit the generated code for execution on a target.

52. (New) A method of generating computer program instructions with a computer, comprising:

analyzing components in a simulatable block diagram model with the computer, the analyzing:

identifying components critical to control of a hardware device, and

identifying components that are not critical to control of the hardware device;

marking components identified as critical to control of the hardware device as critical components, the marking performed using the computer;

marking the components identified as not critical to control of the hardware device as non-critical components, the marking performed using the computer; and

generating the computer program instructions for the simulatable block diagram model with an automatic code generator, the computer program instructions implementing behavior of the block diagram model, said generating comprising:

generating computer program instructions for the components of the block diagram model that are marked as critical, and

ignoring the components of the block diagram model marked non-critical so that no computer program instructions are generated for the components of the block diagram model marked as non-critical.